REMARKS

The specification has been amended to correct a typographical error at page 5 and an inadvertent error at page 20. With respect to the correction at page 20, Applicants submit that this amendment is supported by the disclosure at page 8, lines 14-17. The claims have been amended to remove improper multiple claim dependencies and to resolve an issue raised by the Examiner under 35 U.S.C. 112, second paragraph.

Entry of the above amendment is respectfully requested.

Correction of Errors in the Specification

On page 2 of the Office Action, the Examiner requests Applicants' cooperation is requested in correcting any errors of which Applicants may become aware in the specification.

In response to the Examiner's request, Applicants have corrected the errors in the specification of which they have become aware.

Rejection under 35 U.S.C. 112, Second Paragraph

On page 2 of the Office Action, claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

The Examiner's Position

Based on the reasons given by the Examiner, the Examiner's position appears to be as follows:

(1) The phrase "high purity" renders the claims indefinite, because it is not clear what Applicant is trying to claim, e.g., whether the product obtained is free from chlorine content.

(2) In claim 9, line 3, the word "amine" is used for imidazole compounds, but it is not clear if the applicant intended to use the word amine for imidazoles.

Applicants' Response

Applicants' comments on each of the issues raised by the Examiner are as follows:

(1) With respect to the first issue raised by the Examiner, Applicants have amended the claims by deleting the phrase "high purity" to obviate this issue. In this regard, Applicants submit that because the (meth)acryloyloxyalkyl isocyanate obtained by the specific preparation process of the present invention inherently contains hydrolyzable chlorine in a lower level than the previous (meth)acryloyloxyalkyl isocyanate, the phrase "high purity" is unnecessary to define the present invention.

(2) As to the second issue raised by the Examiner, Applicants have amended the claims by modifying "an amine" to "at least one of an amine and an imidazole" and by changing "the amine" to "the at least one of an amine and an imidazole" to resolve this issue.

Thus, Applicants submit that the rejection under 35 U.S.C. 112, second paragraph, has been overcome, and withdrawal of this rejection is respectfully requested.

Obviousness Rejection

On page 4 of the Office Action, claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misu et al (US Pat. No. 6,245,935 B1) and further in view of JP 11228523.

In response, Applicants note initially that the Examiner is of the opinion that one of ordinary skill in the art would be motivated to subject hydrolyzable chlorine containing (meth)acryloyloxyalkyl isocyanate to mixing treatment with an epoxy compound and an amine or imidazole at 110 to 160 °C. However, Applicants submit that there seems to be a

misunderstanding about the temperature of the mixing process and distilling process, as discussed below.

US '935 discloses reacting (i.e., mixing) hydrolyzable chloride and an epoxy compound in the presence of an amine and/or imidazole at from 30 to 100 °C, preferably from 40 to 80 °C (column 6, lines 42-44), which is not disclosed as being used at reduced pressure. US '935 also discloses that the purification (which is performed after the step of the treating process, see column 3, lines 22-28) is performed by distillation at a distillation temperature of less than 100 °C under reduced pressure in the presence of a polymerization inhibitor (column 3, lines 29-33). Example 1 of US '935, wherein the mixing temperature is 60 °C, shows that the obtained 2-isocyanatoethyl methacrylate contained 29 ppm of hydrolyzable chloride after a mixing process and a distilling process, and a second distilling process was needed for further purification (see the disclosure beginning at column 7, line 35).

On the other hand, the present invention enables the hydrolyzable chlorine content of (meth)acryloyloxyalkyl isocyanate to be not more than 10 ppm (e.g., 8, 7, 5, 4 and 5 ppm in Examples 1 to 5, respectively), by distillation only once (see page 9, line 22 to page 10, line 5). Applicants submit that such a remarkable effect is surprising, and it would not have been obvious for a person skilled in the art as to whether the product is stable after the mixing treatment under the given high temperature and whether it can be obtained in high yield or not.

Applicants submit that the mixing treatment and the distillation should be distinguished from each other, and that there is no teaching or suggestion in US '935, as well as JP '523, to modify the mixing temperature to the presently recited range of 110 to 160 °C.

Further, Applicants submit that the present invention as claimed in claim 3, etc., is distinguished from US '935 and JP '523 by when a polymerization inhibitor (e.g., phenothiazine)

is added. In this regard, Applicants submit that US '935 and JP '523 are silent as to adding a polymerization inhibitor in the mixing treatment as well as in the distillation, in the given ratio in the each step.

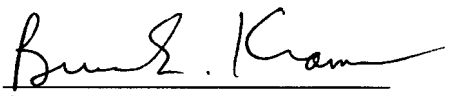
Thus, Applicants submit that the present invention is not obvious over the cited art combination, and withdrawal of this rejection is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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